



## Practice

### 10.1 Introduction to Probability

Find the probability of each event.

1. A blue card is drawn at random from a bag containing 2 white cards, 1 red card, and 7 blue cards. \_\_\_\_\_
2. Frederique, who arrives home at 6:42 P.M., is home to receive a call that can come at any time between 6:40 and 6:50. \_\_\_\_\_
3. A letter chosen at random from the letters of the word *permutation* is a vowel. \_\_\_\_\_
4. A card chosen at random from a standard 52-card deck is a heart or a diamond. \_\_\_\_\_
5. A card chosen at random from a standard deck is not an 8 or an ace. \_\_\_\_\_
6. A number cube is rolled, and a number greater than 3 and less than 6 results. \_\_\_\_\_
7. A letter chosen at random from the alphabet is not one of the 5 standard vowels. \_\_\_\_\_
8. A point on a 12-inch ruler is chosen at random and is located within an inch of an end of the ruler. \_\_\_\_\_

A spinner is divided into three colored regions. You spin the spinner a total of 150 times. The results are recorded in the table. Find the experimental probability of each event.

|        |    |
|--------|----|
| green  | 42 |
| yellow | 65 |
| pink   | 43 |

9. green \_\_\_\_\_
10. yellow \_\_\_\_\_
11. pink \_\_\_\_\_
12. not pink \_\_\_\_\_
13. not yellow \_\_\_\_\_

Find the number of possible license plate numbers (with no letters or digits excluded) for each of the following conditions:

14. 6 digits \_\_\_\_\_
15. 2 letters followed by 3 digits \_\_\_\_\_
16. 4 letters followed by 3 digits \_\_\_\_\_
17. 5 digits followed by 2 letters \_\_\_\_\_
18. 2 digits followed by 2 letters followed by 2 digits \_\_\_\_\_



## Practice

### 10.2 Permutations

Find the number of permutations of the first 7 letters of the alphabet for each situation.

1. taking all 7 letters at a time

\_\_\_\_\_

2. taking 5 letters at a time

\_\_\_\_\_

3. taking 4 letters at a time

\_\_\_\_\_

4. taking 3 letters at a time

\_\_\_\_\_

In how many ways can 12 books be displayed on a shelf if the given number of books are available?

5. 12 books

\_\_\_\_\_

6. 14 books

\_\_\_\_\_

7. 15 books

\_\_\_\_\_

8. 20 books

\_\_\_\_\_

Find the number of permutations of the letters in each word.

9. *geometry*

\_\_\_\_\_

10. *algebra*

\_\_\_\_\_

11. *addition*

\_\_\_\_\_

12. *calculus*

\_\_\_\_\_

13. *mathematics*

\_\_\_\_\_

14. *arithmetic*

\_\_\_\_\_

15. Lizette decorates windows for a department store. She plans to design a baby's room with a row of stuffed elephants and monkeys along one wall. If she has 8 identical elephants and 10 identical monkeys, in how many different ways can the stuffed animals be displayed?

\_\_\_\_\_

16. The 6 candidates for a student government office are invited to speak at an election forum. In how many different orders can they speak?

\_\_\_\_\_

17. Representatives from 8 schools are represented at a school newspaper workshop. In how many different ways can the 8 representatives be seated around a circular table?

\_\_\_\_\_

18. Ten colleges are participating in a college fair. Booths will be positioned along one wall of a high school gymnasium. In how many different orders can the booths be arranged?

\_\_\_\_\_